care of severe sepsis. **METHODS: Observational prospective before and after study** in 59 medical-surgical intensive care units located throughout Spain. A total of 854 patients were enrolled in the pre-educational program cohort (**usual or standard care** of severe sepsis, November-December 2005) **and 1465 patients during the post-**educational program (SSC protocol care of severe sepsis, March-June 2006). The educational program aimed to increase the adherence to the SSC protocol. The SSC protocol included pharmacological (antibiotics, fluids, steroids and drotrecogina alfa (activated)) and medical (early-goal directed therapy, tight glucose control and lung protective strategy) interventions. Clinical (hospital mortality) and economical (health care resource and treatment costs) outcomes were recorded. Health care system perspective was used for costs. Incremental cost-effectiveness ratios (ICERs) and incremental cost-utility ratios (ICURs) were used as primary outcomes. ICERs and ICURs were estimated by using multivariable regression models and its variability addressed by using bootstrapping. **RESULTS: Patients in the SSC protocol care cohort** had a lower risk of hospital mortality (44.0% vs. 39.7%, P = 0.04). However, the SSC protocol care resulted in a mean increase in cost of €1800 per patient, largely driven by increased length of stay. Mean life years gained (LYG) and quality-adjusted life years (QALYs) were higher in the SSC protocol care cohort: 0.7 years and 0.5 QALYs, respectively. The adjusted ICER of the SSC protocol was €2556.9 per LYG and the adjusted ICUR was €3579.6 per QALY. Ninety percent of the bootstrap replications were below the threshold of €30,000 per LYG. **CONCLUSIONS: The** SSC protocol seems to be a cost–effectiveness option for treating severe sepsis in Spain.

PIN56

COST–EFFECTIVENESS OF ATAZANAVIR/R VS. LOPINAVIR/R IN TREATMENT NAIVE HIV PATIENTS IN SPAIN

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OBJECTIVES: To assess the cost-effectiveness of atazanavir/r vs. lopinavir/r in treatment-naïve HIV patients in Spain. **METHODS:** A life-time Markov-cohort model was created with the following health states 1st line, 2nd line and salvage therapy. The cycle length was one year; patients could switch treatment due to adverse events, lack of efficacy or non-compliance. Those discontinuing 1st line treatment due lack of efficacy switched to darunavir/r. Those that discontinued 1st line due to adverse events or non-compliance switched to efavirenz/emtricitabine/tenofovir. Everyone discontinuing 2nd line was given a salvage therapy. Patients were at risk of developing a cardiovascular event or to die in each state. Drug specific safety and efficacy inputs were taken from the 48 week CASTLE trial, risk of cardiovascular events were estimated with Framingham equation and risk of death was from Spanish life-tables and literature. The analysis was done from a societal perspective; outcomes were total costs and Quality-Adjusted Life Years after life-time. Robustness was assessed by uni- and multivariate sensitivity analyses. Recent 96-week trial efficacy and safety data from the CASTLE was used as a scenario analysis. **RESULTS:** The model forecasted a difference of 0.20 [0.11 to 0.32] QALYs after life-time and a reduction in total costs of –€7,000 [–€28,888 to €12,491]. Probabilistic sensitivity analyses showed that atazanavir/r has a 23.5% and a 76.5% probability to be in the NE and SE quadrant of cost-effectiveness plane. Univariate sensitivity analysis showed that results were most sensitive to changes in probabilities of switching treatment. In the scenario analysis, a QALY gain of 0.21 was estimated and total costs were estimated to be €4500 higher for atazanavir/r. **CONCLUSIONS:** This analysis suggests that atazanavir/r has a favorable cost-effectiveness ratio for treatment naïve HIV patients in Spain.

PIN57

A COMPARISON OF THE COST-EFFECTIVENESS OF THE 13-VALENT (PCV13) AND 10-VALENT PNEUMOCOCCAL CONJUGATE VACCINES IN THE UK

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OBJECTIVES: A 7-valent pneumococcal conjugate vaccine (PCV7, Prevenar*) is currently recommended for childhood vaccination in the UK. A 10-valent vaccine (PCV10, Synflorix, GSK) is licensed and a 13-valent vaccine (PCV13, Wyeth) is currently being reviewed by regulatory authorities. This study estimated the cost effectiveness of PCV13 and PCV10 compared to PCV7 for childhood vaccination in the UK. **METHODS:** A steady state, static cohort model was constructed comparing the incremental benefit of PCV13 compared to PCV7 and PCV10 compared to PCV7 for vaccination of the entire birth cohort. In children, the model considered the incidence and subsequent costs of four disease states: pneumococcal meningitis; pneumococcal bacteraemia; all cause pneumonia and acute otitis media (AOM). In adults the model considered invasive pneumococcal disease (IPD) and all cause pneumonia, exploring the potential impact of herd immunity. Sensitivity analyses were conducted on incidence, mortality rates, vaccine efficacy, serotype coverage and costs, discount rate, uptake and non-vaccine serotype prevalence. **RESULTS:** The model estimated that, in addition to PCV7, PCV13 (PCV10) would annually reduce the incidence of IPD by 888 (573) cases, prevent 23 (16) deaths, increase the number of life years gained by 509 (343), increase QALYs gained by 611 (375) and reduce medical costs by £5.2m (£3.3m). The benefits of the new vaccines are sensitive to efficacy and the magnitude and pattern of herd immunity that emerges. **CONCLUSIONS:** Our analysis found that PCV13 vaccination in the UK will be more effective than PCV10 in reducing the burden of pneumococcal disease when compared to PCV7 and will further reduce cost. Final cost-effectiveness will depend on the emergence of herd immunity benefits in the UK, the impact on AOM and pneumonia, the vaccination schedule deployed and price of PCV13 and PCV10.

PIN58

COST-EFFECTIVENESS OF ETRAVIRINE IN SWEDEN IN TREATMENT-EXPERIENCED HIV-1-INFECTED ADULTS WITH EVIDENCE OF NNRTI RESISTANCE AND AT LEAST 3 PI MUTATIONS

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OBJECTIVES: To determine whether, from the Swedish health care payer perspective etravirine is cost-effective when added to a standard highly active antiretroviral treatment (HAART) in multi-drug resistant HIV-1 infected adults. **METHODS:** Etravirine added to a standard regimen including darunavir/r, an optimized background regimen (OBR) of nucleoside reverse transcriptase inhibitors (NRTIs) and optionally enfuvirtide was compared to the same standard regimen alone. The target population consisted of HIV-1-infected pretreated patients with resistance to non-nucleoside reverse transcriptase inhibitors (NNRTI) and ≥3 protease inhibitor (PI) mutations. Cost-effectiveness, expressed as cost per quality-adjusted life year (QALY) gained, was calculated using a lifetime Markov model. The model predicted patient flow through six health states representing CD4+ T-cell count ranges (>500, 351–500, 201–350, 101–200, 51–100 and 0–50 cells/mm3), and one absorbing 'death' state. **After treat**ment failure, a switch to a **raltegravir regimen was assumed. Transition probabilities** describing patient flow through the model were obtained from immunologic response rates per virologic response category observed in the DUET trials for etravirine and placebo and reported in phase III trials for raltegravir. **All-cause mortality was** obtained from Swedish statistics. HIV-related mortality, utilities and non-ARV costs associated with each CD4+ T-cell count range were obtained from literature. **Antiretroviral (ARV) drug use reflected that observed in the clinical trials. Outcomes and** costs expressed in 2008 Swedish Kronor (SEK) were discounted at 3%. The impact of parameter uncertainty was explored in one-way as well as probabilistic sensitivity analysis. Variability analyses explored different model assumptions. **RESULTS:** The analysis predicted a gain in discounted QALYs of 0.461 and an incremental cost per QALY of SEK362,583, ranging from 240,074SEK/QALY to 474,935SEK/QALY in sensitivity and variability analyses. **CONCLUSIONS:** The results suggest etravirine to be cost-effective in Sweden when added to a standard multi-drug regimen in pretreated HIV patients with evidence of NNRTI and PI resistance.

PIN59

POTENTIAL ECONOMIC IMPACT OF OUTPATIENT CARBAPENEM TREATMENT FOR BACTERAEMIA CAUSED BY ESBL-PRODUCING BACTERIA IN HONG KONG—A DECISION ANALYSIS

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OBJECTIVES: Outpatient parenteral antimicrobial therapy (OPAT) with carbapenem for bacteraemia caused by extended-spectrum beta-lactamase (ESBL)-producing bacteria may potentially be cost-saving. Yet in Hong Kong, China and many southeast Asia regions, patients requiring intravenous antimicrobial therapy are usually treated in an in-patient setting. In the present study, we analyzed the cost of inpatient versus outpatient carbapenem treatment for ESBL bacteraemia. **METHODS:** Economic outcomes of two antimicrobial strategies were simulated by a decision tree: 1) inpatient carbapenem treatment; 2) outpatient group (initially inpatient carbapenem treatment followed by ertapenem OPAT). Clinical inputs were estimated from literature and cost analysis was conducted from Hong Kong public health care provider's perspective. Robustness of model was examined by sensitivity analysis. **RESULTS:** The results showed that outpatient group (US$12,008) was less costly than the inpatient group (US$15,446) (USD1 = HKD7.8) by 22% in base-case analysis. The model was robust to variation of all variables in one-way sensitivity analysis. In Monte Carlo stimulations, cost of outpatient group (US$13,153 ± **2,064) was significantly lower than the** inpatient group (US$15,650 ± **1,602) 98.6% of the time by a mean difference of** US$2,497 (95% CI = US$2,469–2,525) ($p < 0.0001$). **CONCLUSIONS:** Initial inpatient carbapenem treatment followed by OPAT appears to be less costly than an inpatient treatment course for ESBL bacteraemia from the perspective of Hong Kong public health care providers.

PIN60

COST-EFFECTIVENESS OF PEGINTERFERON ALFA-2A VERSUS ENTECAVIR IN THE TREATMENT OF HBEAG-POSITIVE CHRONIC HEPATITIS B IN CHINA

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OBJECTIVES: The objective of the study was to evaluate the cost-effectiveness of peginterferon alfa-2a compared to entecavir for the treatment of HBeAg-positive chronic hepatitis B in China. **METHODS:** A Markov health-state model was designed to estimate the direct medical costs and outcomes (life year gained and QALY) of treating HBeAg-positive chronic hepatitis B in China. The model included 11 health states—Chronic hepatitis B (CHB), HBeAg seroconversion, HBsAg loss, CHB with resistance, Flare due to resistance, Compensated cirrhosis, Decompensated cirrhosis, Hepatocellular carcinoma, Liver transplant, Post-liver transplant and death. The evolution of a cohort of HBeAg-positive CHB patients was simulated along 80 years with yearly cycles. The clinical and quality of life data were obtained from published literature. From the perspective of Chinese health insurance system, cost data was calculated